REMARKS

Claims 1-19 are pending in the present application. All of the claims were found obvious over Razoumov et al. (U.S. 20050129063, "Razoumov"). In addition, Claim 7 is objected to as being in improper form. The applicant thanks the Examiner for a thorough review of the present application.

Claim Amendments

Claim 1 is herein amended to provide antecedent basis for "pool of mobile stations" recited in the eighth line of Claim 1, and to make the related language in the claim consistent with the recited "pool of mobile stations."

Consequential amendments are also made to Claims 3, 4 and 5 to use consistent terminology.

Claim 14 is amended to positively recite the subject matter of the whereby clause.

Claim 7 has been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claim 7 is herein amended to correct the typographical error, so that Claim 7 properly depends from Claim 1.

Claims 1 – 19 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Razoumov. Applicants respectfully traverse this rejection.

Regarding Claim 1, the Examiner seems to have misunderstood what Razoumov teaches. The Examiner stated that Razoumov discloses calculating the average value $\overline{R}_{av}$ of the projected average throughput values for at least a portion of the pool of mobile stations. However, Razoumov teaches that each priority function is a function of the rate request indicator and the projected throughput of a given mobile user (paragraph [0016]). Eventually, all the priority function for all users having pending data are provided to a schedule unit where a schedule is determined among the various users associated with the priority function (paragraph [0030]).

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS PLLC
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

Razoumov does not teach or suggest calculating the average value $\overline{R}_{av}$ of the projected average throughput values for at least a portion of the pool of mobile stations.

The Examiner admits that Razoumov fails specifically to disclose the determination of a tuning parameter α in the range of 0 to 1 inclusive and the calculation of the priority function as: $CSI \times \left[\alpha / \overline{R} + (1-\alpha)/\overline{R}_{av}\right]$. However, the Examiner argues that it would have been obvious to one of ordinary skill in the art to utilize the teachings of Razoumov in achieving a scheduling system whereby a fair allocation of channels leads to an optimization of transmission channels among users.

Razoumov notes that there is a need for a fair method for scheduling packet data transmission to mobile users that is channel-sensitive (paragraph [0007]). Razoumov's application attempts to address this need. However, Razoumov has chosen a specific implementation to reach this goal different from the method claimed in the current application. Hence Razoumov teaches away from the approach taken by the applicants by proposing a different method.

Moreover, the applicants submit that the specific priority function is an important element in any scheduling algorithm. Changing the function yields an entirely new method of scheduling users. The specific function determines which elements of the system are to be emphasized. Such elements may include the overall rate at which the system transmits data, the delay that the data experiences while waiting to be transmitted, the total amount of data waiting to be sent by the system to a particular user, and so forth. While altering the parameters mentioned by Razoumov would lead to an optimization of transmission channels among users, that optimization is only specific to the priority function described by Razoumov. A different priority function would result in a different allocation of channels and a different type of optimization. The teaching of Razoumov instructs how to achieve a certain scheduling system only in the context of the priority function disclosed by Razoumov.

Furthermore, the purpose of this tuning parameter in the range of 0 to 1 inclusive is to adjust the performance of the scheduling system between the goals of maximizing the total throughput of the system and providing a proportionally fair allocation of resources among the

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS PLLC
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

users. Setting the value of α to 0 or 1 could achieve those goals, and intermediate values of α could adjust the performance linearly between those two goals. (For example, setting $\alpha = 0.5$ should result in a system performance approximately halfway between those two boundaries.) What is claimed, however, is the division by the average of the projected average throughputs $\overline{R}_{av}$ in the claimed priority function to obtain the performance adjustment. One of ordinary skill in the art would normally first think of dividing by a constant value, which does not yield the desired linear performance adjustment. Hence, the combination of the tuning parameter α and the average of the projected average throughputs $\overline{R}_{av}$ in the claimed priority function is not obvious to one of ordinary skill in the art.

Therefore, it follows from any one of the above arguments that Claim 1 is not obvious in view of Razoumov. Therefore, Claims 2–7, being dependent on Claim 1, are not obvious in view of Razoumov.

Regarding Claim 8, as argued above, the Examiner seems to have misunderstood what Razoumov teaches. The Examiner seems to be arguing that Razoumov discloses updating the priority functions of the first subset of users based on the channel state indicators multiplied by a function of the using parameter, the average projected throughput for the first subset of users, and on the average projected throughput value across all users in the section of the pool of users. However, Razoumov teaches that each priority function is a function of the rate request indicator and the projected throughput of a given mobile user (paragraph [0016]). Eventually, all the priority functions for all users having pending data are provided to a schedule unit where a schedule is determined among the various users associated with the priority function (paragraph [0030]). However, Razoumov does not teach or suggest updating the priority functions of the first subset of users based on the average projected throughput value across all users in the section of the pool of users.

Moreover, Razoumov does not teach or suggest a tuning parameter α in the range of 0 to 1 inclusive. As argued with regard to Claim 1, the method of including the tuning parameter α and the average of the projected average throughputs $\overline{R}_{av}$ in the priority function to obtain the desired linear adjustment in system performance is not obvious to one of ordinary skill in the art.

The Examiner argues that modifying Razoumov to include these elements would have been obvious to utilize the teaching of Razoumov in achieving a scheduling system whereby a fair allocation of channels leads to an optimization of transmission channels among users. However, Razoumov's application attempts to address this need, chooses a specific implementation to reach this goal vastly different from the method as claimed in the current application and neither teaches nor suggests anything like what applicant claims.

Therefore, it follows that Claim 8 is not obvious in view of Razoumov. Therefore, Claims 9–11, being dependent on Claim 8, are also not obvious in view of Razoumov.

Regarding Claim 12, the Examiner seems to have misunderstood what Razoumov teaches. The Examiner states that Razoumov discloses a fourth set of instructions to calculate the average value of the projected throughput values. However, as argued in regard to Claim 1 above, Razoumov teaches that each priority function is a function of the rate request indicator and the projected throughput of a given mobile user (paragraph [0016]). Eventually, all the priority function for all users having pending data are provided to a schedule unit where a schedule is determined among the various users associated with the priority function (paragraph [0030]). However, Razoumov does not teach or suggest a set of instructions to calculate the average value of the projected throughput values.

The Examiner admits that Razoumov fails to disclose a second set of instructions to determine the value of a tuning parameter α within the range of 0 to 1 inclusive; and a fifth set of instructions to calculate a priority function for the mobile stations, wherein the priority function is a function of $CSI \times \left[\alpha/\overline{R} + (1-\alpha)/\overline{R}_{av}\right]$.

The Examiner argues that it would have been obvious to one of ordinary skill in the art to utilize the teaching of Razoumov in achieving a schedule whereby a fair allocation of channels leads to an optimization of transmission channels among users. As argued with regard to Claim 1, Razoumov is attempting to achieve such a system in the disclosure he provides. Therefore, since Razoumov teaches away from the approach taken by the applicants, this suggests that the applicants' approach is not obvious in view of Razoumov.

Moreover, Razoumov does not suggest a tuning parameter α within the range of 0 to 1 inclusive, or a fifth set of instructions to calculate a priority function for the mobile stations, wherein the priority function is a function of $CSI \times \left[\alpha / \overline{R} + (1-\alpha) / \overline{R}_{av}\right]$. As argued with regard to Claim 1, the method of including the tuning parameter α and the average of the projected average throughputs $\overline{R}_{av}$ in the priority function to obtain the desired linear adjustment in system performance is not obvious to one of ordinary skill in the art.

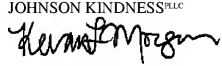
Therefore it follows that Claim 12 is not obvious in view of Razoumov. Claim 13, being dependent on Claim 12, is also not obvious in view of Razoumov.

Regarding Claim 14, the Examiner appears to have misunderstood Razoumov. The Examiner seems to be arguing that Razoumov discloses finding an average of the projected average throughputs for the plural mobile stations. However, Razoumov does not teach or disclose finding an average of the projected average throughputs for the plural mobile stations. Therefore, Claim 14 is not obvious in view of Razoumov. Therefore, Claims 15–19 being dependent on Claim 14, cannot be obvious in view of Razoumov.

Reconsideration and withdrawal of the rejections, and allowance of the claims, is respectfully requested.

Respectfully submitted,

CHRISTENSEN O'CONNOR
JOHNSON KINDNESS^{PLLC}



Kevan L. Morgan
Registration No. 42,015
Direct Dial No. 206.695.1712

KLM:jlb

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS^{PLLC}
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100